CLAIMS

1. A shuttle for a flow mixer having a thermostatic capsule, the shuttle comprising:
   - a first annular rim for controlling flow of hot water;
   - a second annular rim for controlling flow of cold water;
   - a hub connected with the rims;
   - a seat on the hub for supporting the thermostatic capsule at its flange with its sheath extending downstream of water flow past it and its push rod arranged for axial movement of the capsule to control the position of the shuttle; and
   - a flow directing sleeve carried on the shuttle and extending at least partially about and at least substantially parallel to the sheath for directing mixed flow to the flange end of the sheath.

2. A shuttle as claimed in claim 1, wherein the sleeve is imperforate directing the flow along its length, a complementary sleeve being provided in the mixer for directing the flow back inside the shuttle sleeve to the flange region of the sheath and thence along the sheath.

3. A flow mixer comprising:
   - a shuttle as claimed in claim 1 or claim 2;
   - a thermostatic capsule for controlling the position of the shuttle in accordance with ambient flow temperature;
   - means for locating the flange of the capsule in the seat of the shuttle;
   - a shuttle return spring for urging the shuttle and capsule combination to return from expansion movement caused by extension of the push rod with respect to the spigot;
   - a shuttle barrel, in which the shuttle is slidably mounted, the barrel having:
     - a land co-operating with the shuttle to direct hot flow to the hot flow annular rim of the shuttle and cold flow to the cold flow annular rim of the shuttle and
     - complementary hot and cold flow annular rims for controlling the hot and cold flows in co-operation with the shuttle's rims; and
   - at least one flow direction feature for co-operating with the sleeve of the shuttle to direct the flow to the thermostatic capsule to the flange region of its sleeve.

4. A flow mixer as claimed in claim 3, wherein the flow direction feature is a complementary sleeve directing the flow which has passed along the outside of the shuttle sleeve back inside it to the flange region of the sheath and thence along the sheath.

5. A flow mixer as claimed in claim 3 or claim 4, wherein the capsule flange locating means includes an over-travel spring acting between the shuttle and the spigot of the capsule, with a force greater than that of the return spring, for accommodating sudden changes in flow conditions causing the shuttle to be stopped by abutment against either of the annular flow rims.

6. A shuttle substantially as hereinbefore described with reference to Figures 1 and 2 of the accompanying drawings.

7. A flow mixer substantially as hereinbefore described with reference to Figures 1 and 2 of the accompanying drawings.